

WHAT IS CLAIMED IS:

1. A substantially pure or recombinant polypeptide:
 - a) exhibiting identity over a length of at least about 12 amino acids to the mature polypeptide from SEQ ID NO: 2 or 6;
 - b) exhibiting identity over a length of at least about 12 amino acids to the mature SEQ ID NO: 8 or 10; or
 - c) exhibiting identity over a length of at least about 12 amino acids to the mature SEQ ID NO: 12 or 14.
2. The polypeptide of Claim 1, wherein:
 - a) said SEQ ID NO: is 2 or 6, and said polypeptide:
 - i) is a mature natural sequence DAP12 from Table 1;
 - ii) comprises an ITAM motif; or
 - iii) comprises a charged residue in a transmembrane domain;
 - b) said SEQ ID NO: is 8 or 10, and said polypeptide:
 - i) is a mature natural sequence DAP10 from Table 2;
 - ii) comprises an ITIM motif; or
 - iii) comprises a charged residue in a transmembrane domain; or
 - c) said SEQ ID NO: is 12 or 14, and said polypeptide:
 - i) is a mature natural sequence MDL-1 of Table 3; or
 - ii) comprises a charged residue in a transmembrane domain.
3. A polypeptide of Claim 1, which:
 - a) comprises a plurality of said lengths; or
 - b) is a natural allelic variant of DAP12;
 - c) is a natural allelic variant of DAP10;
 - d) is a natural allelic variant of MDL-1;
 - e) has a length at least about 30 amino acids;
 - f) is a synthetic polypeptide;
 - g) is attached to a solid substrate;
 - h) is conjugated to another chemical moiety;
 - i) is a 5-fold or less substitution from natural sequence; or
 - j) is a deletion or insertion variant from a natural sequence.

4. A composition comprising:
 - a) a sterile DAP12 polypeptide of Claim 3;
 - b) said DAP12 polypeptide of Claim 3 and a carrier, wherein said carrier is:
 - i) an aqueous compound, including water, saline, and/or buffer; and/or
 - ii) formulated for oral, rectal, nasal, topical, or parenteral administration;
 - c) a sterile DAP10 polypeptide of Claim 3; or
 - d) said DAP10 polypeptide of Claim 3 and a carrier, wherein said carrier is:
 - i) an aqueous compound, including water, saline, and/or buffer; and/or
 - ii) formulated for oral, rectal, nasal, topical, or parenteral administration;
 - e) a sterile MDL-1 polypeptide of Claim 3, or
 - f) said MDL-1 polypeptide of Claim 3 and a carrier, wherein said carrier is:
 - i) an aqueous compound, including water, saline, and/or buffer; and/or
 - ii) formulated for oral, rectal, nasal, topical, or parenteral administration.

5. A fusion protein comprising said polypeptide of Claim 1 and:
 - a) a detection or purification tag, including a FLAG, His6, or immunoglobulin peptide;
 - b) bacterial β -galactosidase, trpE, Protein A, β -lactamase, alpha amylase, alcohol dehydrogenase, and yeast alpha mating factor; or
 - c) sequence of another membrane protein.

6. A kit comprising said polypeptide of Claim 1, and:
 - a) a compartment comprising said polypeptide; and/or
 - b) instructions for use or disposal of reagents in said kit.

7. A binding compound comprising an antigen binding portion from an antibody, which specifically binds to:
 - a) a natural DAP12 polypeptide of Claim 2, wherein said antibody:
 - i) is raised against a mature polypeptide of Table 1;
 - ii) is immunoselected;
 - iii) is a polyclonal antibody;
 - iv) binds to a denatured DAP12;
 - v) exhibits a K_d to antigen of at least 30 μ M;
 - vi) is attached to a solid substrate, including a bead or plastic membrane;
 - vii) is in a sterile composition; or
 - viii) is detectably labeled, including a radioactive or fluorescent label;

- 5 b) a natural DAP10 polypeptide of Claim 2, wherein said antibody:
- i) is raised against a mature polypeptide of Table 2;
 - ii) is immunoselected;
 - iii) is a polyclonal antibody;
 - iv) binds to a denatured DAP10;
 - v) exhibits a K_d to antigen of at least 30 μM;
 - vi) is attached to a solid substrate, including a bead or plastic membrane;
 - vii) is in a sterile composition; or
 - viii) is detectably labeled, including a radioactive or fluorescent label; or
- 10 c) a natural MDL-1 polypeptide of Claim 2, wherein said antibody:
- i) is raised against a mature polypeptide of Table 3;
 - ii) is immunoselected;
 - iii) is a polyclonal antibody;
 - iv) binds to a denatured MDL-1;
 - 15 v) exhibits a K_d to antigen of at least 30 μM;
 - vi) is attached to a solid substrate, including a bead or plastic membrane;
 - vii) is in a sterile composition; or
 - viii) is detectably labeled, including a radioactive or fluorescent label.
- 20 8. A kit comprising said binding compound of Claim 7, and:
- a) a compartment comprising said binding compound; and/or
 - b) instructions for use or disposal of reagents in said kit.
9. A composition comprising:
- 25 a) a sterile binding compound of Claim 7, or
- b) said binding compound of Claim 7 and a carrier, wherein said carrier is:
- i) an aqueous compound, including water, saline, and/or buffer; and/or
 - ii) formulated for oral, rectal, nasal, topical, or parenteral administration.
- 30 10. An isolated or recombinant nucleic acid encoding a polypeptide of Claim 1,
wherein said nucleic acid encodes an antigenic peptide sequence of Table 1, 2, or 3.
11. The nucleic acid of Claim 10, which encodes a plurality of antigenic peptide
sequences of said table.
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12. The nucleic acid of Claim 10, which:
- a) is an expression vector;
 - b) further comprises an origin of replication;
 - c) is from a natural source;
 - 5 d) comprises a detectable label;
 - e) comprises synthetic nucleotide sequence;
 - f) is less than 6 kb, preferably less than 3 kb;
 - g) is from a mammal, including a primate or rodent;
 - h) comprises a natural full length coding sequence;
 - 10 i) is a hybridization probe for a gene encoding DAP12, DAP10, or MDL-1; or
 - j) is a PCR primer, PCR product, or mutagenesis primer.
13. A nucleic acid which hybridizes under stringent wash conditions of at least 50° C, less than 400 mM salt, and 50% formamide to:
- 15 a) SEQ ID NO: 1 or 5;
 - b) SEQ ID NO: 7 or 9; or
 - c) SEQ ID NO: 11 or 13.
14. A cell or tissue comprising a recombinant nucleic acid of Claim 10.
- 20 15. The cell of Claim 14, wherein said cell is:
- a) a prokaryotic cell;
 - b) a eukaryotic cell;
 - c) a bacterial cell;
 - 25 d) a yeast cell;
 - e) an insect cell;
 - f) a mammalian cell;
 - g) a mouse cell;
 - h) a primate cell; or
 - 30 i) a human cell.
16. A kit comprising said nucleic acid of Claim 10, and:
- a) a compartment comprising said nucleic acid;
 - b) a compartment further comprising a DAP12, DAP10, or MDL-1 polypeptide;
 - 35 and/or
 - c) instructions for use or disposal of reagents in said kit.

17. The nucleic acid of Claim 13, which:
- a) exhibits identity over a stretch of at least about 30 nucleotides to a primate DAP12;
 - b) exhibits identity over a stretch of at least about 30 nucleotides to a primate DAP10;
 - c) exhibits identity over a stretch of at least about 30 nucleotides to a primate MDL-1; and/or
 - d) further encodes a KIR, ILT/MIR or CD94/NKG2C receptor.
18. The nucleic acid of Claim 17, wherein:
- a) said wash conditions are at 60° C and/or 200 mM salt; or
 - b) said stretch is at least 55 nucleotides.
19. A method of modulating physiology or development of a cell or tissue culture cells comprising contacting said cell with an agonist or antagonist of a DAP12, DAP10, or MDL-1.
20. A method of screening for a compound which blocks interaction of a DAP12 or DAP10 of Claim 2 with a KIR, ILT/MIR, or CD94/NKG2C receptor, comprising contacting said compound to said DAP12 or DAP10 in the presence of said receptor.